Project B: Robit lost his donut in the forrest!

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Goals:

With this project, I wanted to create a small narrative experience that allowed the user to explore a small hand-made world. Therefore, I wanted to have a free camera that allowed to aim and explore in any direction. Initially, I wanted to affix this camera to Robit's head but unfortunately, I couldn't implement that due to time constraints.

Instructions:

-Press w/a/s/d to move around the scene.

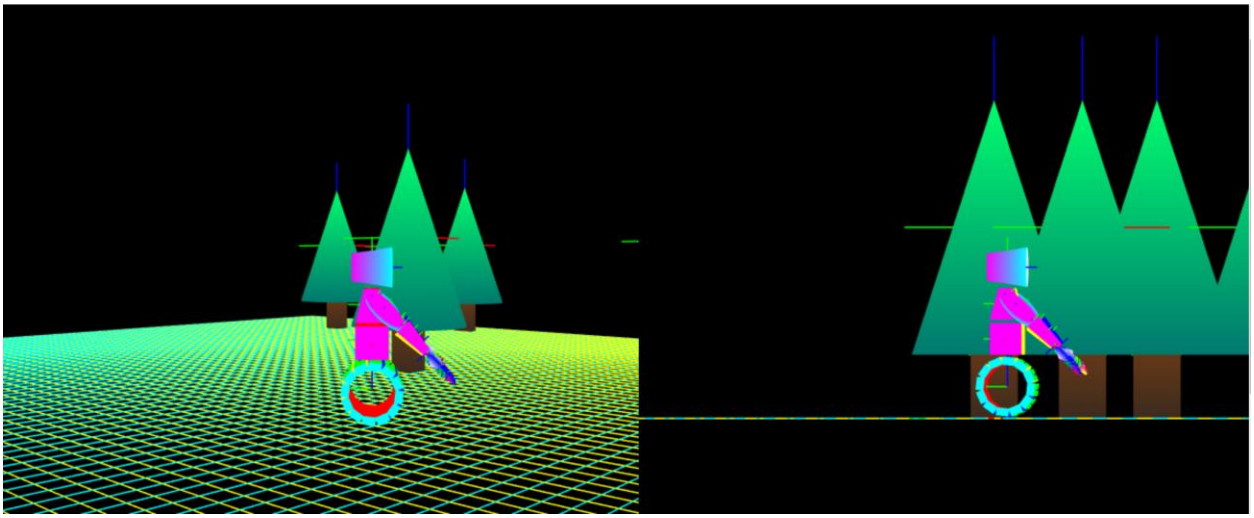
-Press r/f/ to pan the camera up and down and q/e to pan the camera side to side.

-Robit has a few animations available, press the different buttons in the UI to check them out. You can also raise and lowe his arms with p/o.

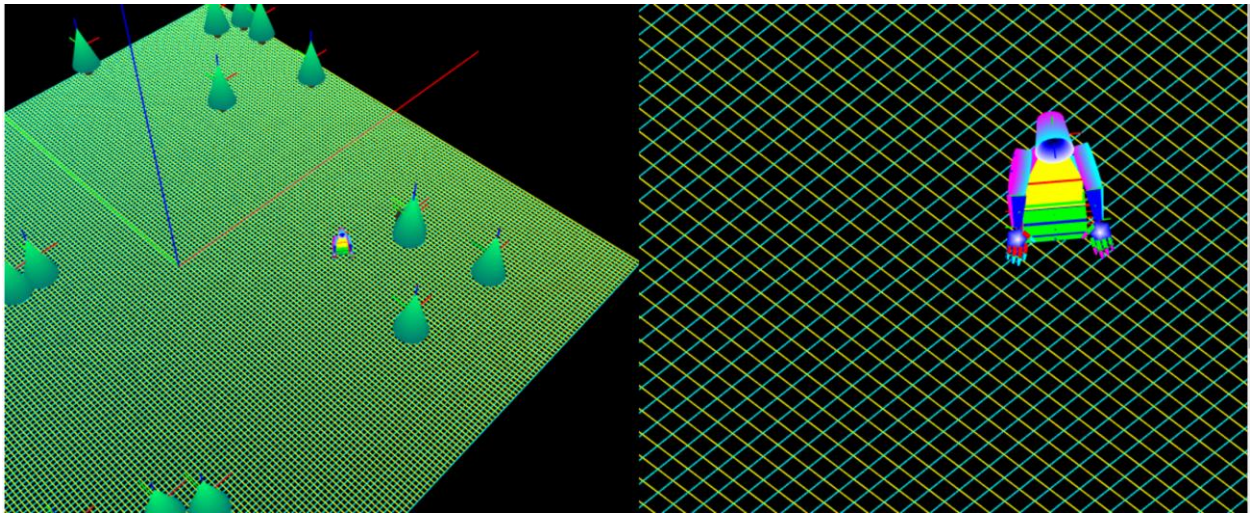
- You objective is to move around the scene to help Robit find his donut! If you find it, make sure to click and drag to rotate it!

- Press t to hide the models and show only the axes.

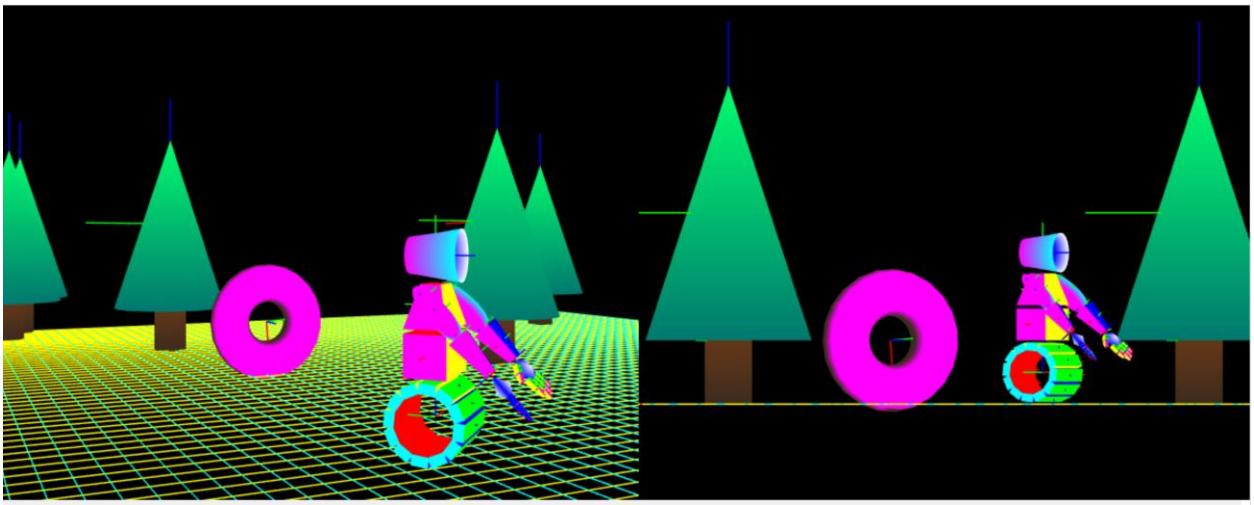
Results:



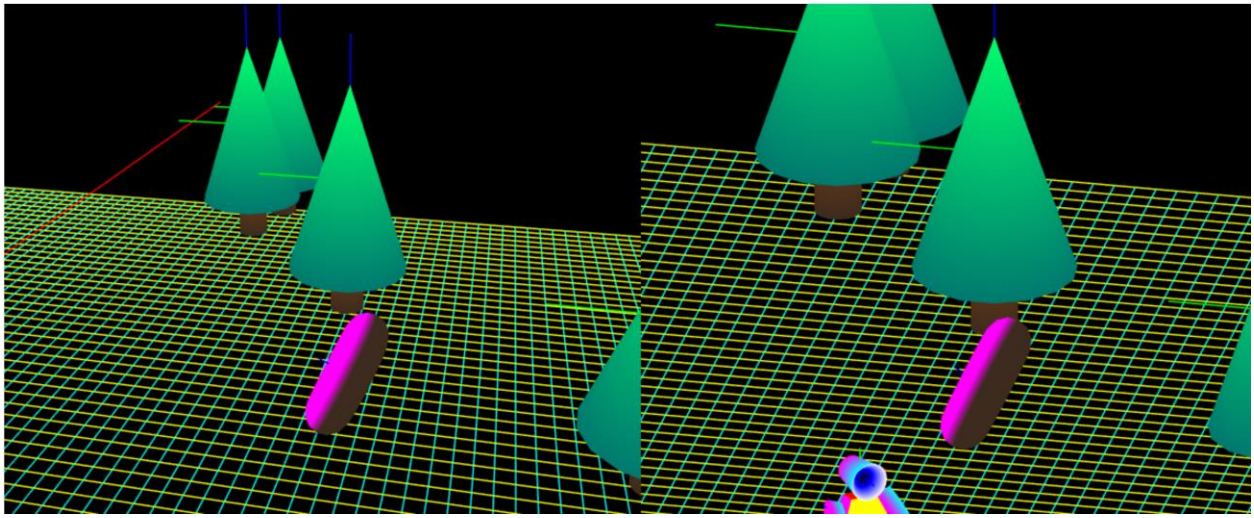
Robit circles around the world on his own! You can see him in both orthographic and perspective view to compare.



Moving around the camera can allow you to see the world from up high!



Find the donut hidden in the level! (It’s possible the donut will be stuck in a tree).



You can rotate the donut no matter where the camera is!

SceneGraph:

CameraTransformation:

- Grid.
- Axes.
- Trees:
  - Trunk:
    - Leaves.
- DonutRotation:
  - Donut.
- Rotation Around A Fixed Point:
  - Robot:
    - Head:
    - Body:
    - Wheels:
    - Arms:
      - Shoulder Joint:
        - Upper Arm:
          - Elbow Joint:
            - Forearm:
              - WristJoint:
                - Palm:
                  - Finger1
                  - Finger2
                  - Finger3
                  - Finger4
                  - Finger5

Every finger follows the following graph:

FingerJoint:

Lower Finger:

MiddleJoint:

UpperFinger.